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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/821,800

04/09/2004

Gregory T. Edwards

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9331

8791 7590 06/22/2007

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EXAMINER

CONOVER, DAMON M

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

06/22/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/821,800

Applicant(s)

EDWARDS ET AL.

Examiner

Damon Conover

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004 and 03 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings were received on 3 November 2004. These drawings are acceptable.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: elements 210 (Figure 2) and 1240 (Figure 12). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology

often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The disclosure is objected to because of the following informalities:

In the third sentence of paragraph 35, application 230 is described. This should be either application 250 or EIE 230. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martins (U.S. Patent 6,608,615) in view of Edwards (U.S. Patent 6,106,119).

**With respect to claims 1 and 4,** Martins discloses web browsing applications that track a user's eye gaze while the user is browsing a web page and modifies the presentation of the web page to the user based on the tracked gaze. Martins give the example that sections of a web page that a user has previously viewed may be represented in a progressively changed form, such as in a different color, brightness, or

contrast based on the user's tracked gaze. Modifying the color, brightness, or contrast is analogous to dynamically acting on a characteristic of the application. The display of the web page is also the output of the application, therefore modifying how the web page is displayed is analogous to dynamically acting on an output of the application (column 2, lines 28-50).

Martins does not specifically describe that interpretations of eye tracking data is received from an eye interpretation engine.

Edwards discloses a system and method for presenting high-level interpolations of eye tracking data correlated to saved display images (column 1, lines 15-19).

Edwards describes an eye interpretation engine (EIE) that performs a three-level interpretation process. Level one processing analyzes the raw eye-tracking data to identify elementary features, typically fixations, saccades, smooth pursuit motion and blinks. Level two processing analyzes the elementary features to identify eye-movement patterns, typically consisting of a set of several fixations and/or saccades satisfying certain predetermined criteria. Level three processing analyzes the eye-movement patterns to identify various eye-behavior patterns (interpretations of eye tracking data) (column 7, line 5 – column 8, line 21). Next Edwards describe that a graphical valuation vocabulary (GVV) is assigned to the interpretations of all the levels (column 8, lines 31-41), the GVV is superimposed on the correlated display scenarios (column 8, lines 42-51), and the correlated results are displayed (column 8, lines 52-57).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the eye interpretation engine, as taught by Edwards, to generate

interpretations of eye tracking data in the web browsing application of Martins, in order to provide numerous pieces of information about eye behavior patterns and mental states to the gaze tracking processing (column 2, lines 19-22).

**With respect to claims 2 and 5**, Martins describes that sections of a web page that a user has previously viewed may be represented in a progressively changed form, such as in a different color, brightness, or contrast based on the user's tracked gaze. Modifying the color, brightness, or contrast is analogous to dynamically modifying a characteristic of the application. The display of the web page is also the output of the application; therefore modifying how the web page is displayed is analogous to dynamically modifying an output of the application (column 2, lines 28-50).

**With respect to claims 3 and 6**, Martins further describe, in another example, that an information browsing application may be used to selectively remind air traffic controllers of eventful regions of the display screen not being looked at (portion of an interface that has not been viewed by the user). The color, brightness, or contrast of the ignored regions of the display screen may be modified to alert air traffic controller to view the region (modifying a format of the portion of the interface that has not been viewed by the user) (column 6, lines 2-4).

**With respect to claim 7**, Martins discloses web browsing applications that track a user's eye gaze while the user is browsing a web page and modifies the presentation of the web page to the user based on the tracked gaze. Martins give the example that sections of a web page that a user has previously viewed may be represented in a

progressively changed form, such as in a different color, brightness, or contrast based on the user's tracked gaze (column 2, lines 28-50).

Martins does not specifically describe that interpretations of eye tracking data is received from an eye interpretation engine.

Edwards discloses a system and method for presenting high-level interpolations of eye tracking data correlated to saved display images (column 1, lines 15-19).

Edwards describes an eye interpretation engine (EIE) that performs a three-level interpretation process. Level one processing analyzes the raw eye-tracking data to identify elementary features, typically fixations, saccades, smooth pursuit motion and blinks. Level two processing analyzes the elementary features to identify eye-movement patterns, typically consisting of a set of several fixations and/or saccades satisfying certain predetermined criteria. Level three processing analyzes the eye-movement patterns to identify various eye-behavior patterns (interpretations of eye tracking data) (column 7, line 5 – column 8, line 21). Next Edwards describe that a graphical valuation vocabulary (GVV) is assigned to the interpretations of all the levels (column 8, lines 31-41), the GVV is superimposed on the correlated display scenarios (column 8, lines 42-51), and the correlated results are displayed (column 8, lines 52-57). Edwards describes that every time a predetermined eye behavior pattern of the test person is recognized by the software program, a significant display event takes place and a snapshot is recorded. In the combination of Martins and Edwards, the web page is dynamically acted on when interpretations of the eye tracking data is received (Edwards, column 9, lines 20-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the eye interpretation engine, as taught by Edwards, to generate interpretations of eye tracking data in the web browsing application of Martins, in order to provide numerous pieces of information about eye behavior patterns and mental states to the gaze tracking processing (column 2, lines 19-22).

**With respect to claim 8**, as discussed above, Martins discloses web browsing applications that track a user's eye gaze while the user is browsing a web page and modifies the presentation of the web page to the user based on the tracked gaze (column 2, lines 28-50). As discussed above, Edwards discloses a system and method for presenting high-level interpolations of eye tracking data correlated to saved display images (column 1, lines 15-19). Edwards describes that every time a predetermined eye behavior pattern of the test person is recognized by the software program, a significant display event takes place and a snapshot is recorded. In the combination of Martins and Edwards, the update of the web page (application) is dynamically invoked when interpretations of the eye tracking data is received (Edwards, column 9, lines 20-34).

**With respect to claims 9-11, 12-14, and 15-16**, the "article comprising a computer-readable medium having stored thereon instructions" corresponds to the methods of claims 1-3, 4-6, and 7-8. The argument is the same as is addressed above.



***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Edwards (U.S. Patent 6,102,870) discloses a system and method for determining mental states or mental activities of a person from spatio-temporal eye-tracking data, independent of a priori knowledge of the objects in the person's visual field (column 1, lines 14-19).

Goldberg (U.S. Patent 6,755,527) discloses systems and methods related to analyzing and displaying information associated with a user's eye movements when viewing an image (column 1, lines 13-15). Goldberg describes that data collected during eye-tracking studies can help identify portions of a web page or other images that attract a user's attention and identify other portions that do not attract the user's attention. Based on the results of one or more eye tracking studies, a web page or other image may be modified to attract the user's attention to the desired portion or portions of the web page or other image (column 1, lines 28-34).

Tognazzini et al. (U.S. Patent 5,886,683) disclose apparatus, methods, systems, and computer programs that determine what information presented on a computer display screen most interests a user (abstract).

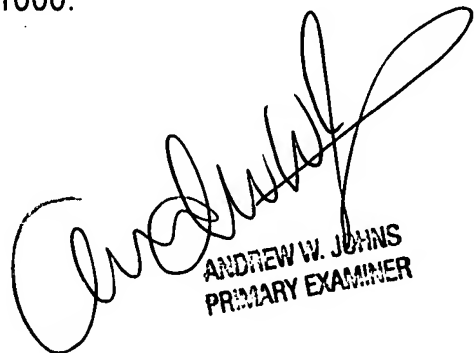
Card et al. (U.S. Patent 6,601,021) disclose a system and method for analyzing eye tracker data collected from a user viewing the display of dynamic hypermedia pages (column 5, lines 14-17).

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Damon Conover whose telephone number is (571) 272-5448. The examiner can normally be reached Monday – Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached at (571) 272-7453. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800) 786-9199 (IN USA OR CANADA) or (571) 272-1000.



ANDREW W. JOHNS  
PRIMARY EXAMINER